

What is claimed are:

1. A switching power source device comprising:

a primary winding of a transformer and a primary switching element connected in series to a DC power source wherein said primary switching element is turned on and off to cause electric current to flow through said primary winding and primary switching element in order to generate DC power from output terminals connected to a secondary winding of said transformer;

a secondary switching element for synchronous rectification connected between said secondary winding of said transformer and output terminals,

a reactor connected in parallel to said secondary winding of the transformer for accumulating energy during the on-period of said primary switching element, and

a secondary control circuit connected to said reactor and a control terminal of said secondary switching element,

wherein said secondary control circuit serves to retain said secondary switching element off during the period for accumulating energy in reactor, retain said secondary switching element on during the period for discharging energy accumulated in said reactor, and turn said secondary switching element off upon completion of energy release from said reactor.

2. The switching power source device of claim 1, wherein said secondary switching element comprises a switch circuit which is switched to an inactive mode for keeping said secondary switching element off to accumulate energy in said reactor during the on-period of said primary switching element; an active mode for turning said secondary switching element on to release energy stored in said reactor during the off-period of said primary switching element; and a shift mode for turning said secondary switching element off upon completion of energy release from said reactor, and

a reset detecting circuit for picking out resetting of said reactor upon completion of energy release from said reactor to convert said switch circuit from the active to the inactive mode to turn said secondary switching element off.

3. The switching power source device of claim 2, wherein said reset detecting circuit comprises a rectification element connected between one end of said secondary winding and one end of said reactor, and

a reset voltage detector for detecting drop in reset voltage on a junction between said reactor and rectification element upon completion of energy release from said reactor to convert said switch circuit to the shift mode.

4. The switching power source device of claim 3, wherein said switch circuit comprises a switch controller which has a first input terminal connected to the other end of said reactor for detecting an accumulative period for accumulating energy in said reactor, a second input terminal connected to said reset detecting circuit, and an output terminal connected to a gate terminal of said secondary switching element.

5. The switching power source device of claim 4, further comprising a retaining circuit connected between the other end of said reactor and the second input terminal of said switch controller for maintaining the second input terminal of said switch controller at high voltage level to hold said switch circuit in the inactive mode when voltage of narrow pulse width is produced at the other end of said reactor.

6. The switching power source device of claim 1 or 2, wherein said secondary control circuit comprises a tertiary winding of said transformer, a reactor current detector connected to said reactor for detecting electric current for accumulating or discharging energy in said reactor, and a switch circuit connected to said tertiary winding, reactor current detector and control terminal of said secondary switching element,

energy is accumulated in said tertiary winding at the same time energy is accumulated in said secondary winding and reactor,

said switch circuit maintains said secondary switching element off to accumulate energy in said tertiary winding, turns said secondary switching element on by voltage produced in said tertiary winding when said reactor current detector detects electric current for releasing energy accumulated in said reactor, and turns said secondary switching element off once said reactor current detector has not detected the electric current from said reactor.